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Erin Marie Steinbach Welters

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COMPETITIVE, COOPERATIVE, AND INDIVIDUALISTIC GROUP

ENVIRONMENTS:

EFFECTS ON JOB SATISFACTION AND PERFORMANCE

A THESIS

College of St. Benedict/St. John's University

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By

Erin M. Steinbach

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PROJECT TITLE: Competitive, Cooperative, and Individualistic Group Environments:
Effects on Job Satisfaction and Performance

Approved by:

Stephen P. Hoag

Associate Professor of Psychology

Richard M. Walberg

Associate Professor of Psychology

Kathleen E. Allen

Outside Reader

Bruce Wollmeier, Ph.D.

Chair, Department of Psychology

Margaret R. Cook

Director, Honors Thesis Program

Mark Thawert, Ph.D.

Director, Honors Program

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Erin Steinbach

Abstract

The effects of task interdependence (competition, cooperation, and individualism) on job satisfaction and performance were investigated. Students from two Catholic, liberal arts colleges completed a creative thinking task in one of four conditions: group competition, cooperation, individual competition, and individual. Rather than supporting the hypotheses, the results indicated that students in the competitive conditions had superior performance to students in non-competitive conditions, and job satisfaction was generally unaffected by the condition students participated in. Trait competitiveness of the participants was also measured in order to determine whether it had a relationship with performance and job satisfaction. A strong relationship between trait competitiveness and performance/job satisfaction was not shown, indicating that the levels of competitiveness of the participants did not affect the results. Several potential explanations, such as validity of the job satisfaction scale, the type of task used, and the testing environment were discussed as elements to consider for further research.

Competitive, Cooperative, and Individualistic Group Environments: Effects on Job Satisfaction and Performance

Social interdependence affects all aspects of our lives including productivity, quality of relationships, and psychological health (Johnson & Johnson, 1991). It is present in leisure activities, in school, and in work. For example, in sports, individuals can compete for trophies, perform as part of a team, or enjoy activities alone. In school students may work together in groups until all individuals learn the material, they may be graded on a curve where only a certain number of people receive A's, or they may work at their own pace to achieve individual goals. Finally, social interdependence exists at work when co-workers either work in teams on projects, work against each other to achieve promotions and sales, or work independently on separate projects. These examples indicate three different types of social interdependence: competition, cooperation, and individualist behavior.

Johnson and Johnson (1989) define competition as the tendency for groups or individuals to work against each other to achieve a goal that only one or a few can attain. There is a perceived scarcity of rewards, and only the best performers receive the reward. In other words, the success of one requires the failure of another (Kohn, 1986). The opposite of competition is cooperation, where individuals or groups work together to accomplish shared goals and receive equitable rewards (Johnson & Johnson, 1989). A third type of social interdependence is individualistic (independent). In this case, individuals work by themselves to accomplish goals unrelated to those of others. Their performance is instead compared to a preset criterion of excellence (Johnson & Johnson, 1989).

There has been a considerable amount of research conducted on the effects of social interdependence on performance, most often focusing on the effects of competition and cooperation. Kohn (1986) states that many people think competition increases performance. For example, Nelson (1998) cites a study between 1886 and 1889 demonstrating that bike racers were faster when they were competing against each other. Additionally, Johnson and Johnson (1989) describe similar studies done by Norman Triplett in 1898 where cyclists had faster times when they were racing against each other than when they were racing against a clock. The results appear to indicate that competition is the cause for better performance.

Although the authors who cite evidence for the superiority of competition believe it increases performance levels, the cause of higher performance may actually be described by social facilitation theory (Worchel, Shebilske, Jordan, & Prislin, 1997). Social facilitation theory states that performing in the presence of others (coaction) increases arousal due to increased anxiety, evaluation apprehension, and increased drive. In other words, individuals performing in front of others may become anxious because they feel others are evaluating their performance. In addition, they try harder so that other individuals will evaluate them well. These factors increase the likelihood that a dominant response (a response that the individual displays with ease) will occur, and if the response assists performance, then performance will be better. Worchel, et al., (1997) insist that the increased arousal “enhances the performance of well-learned responses, but inhibits the performance of complex or new skills.” For example, a professional pianist would likely perform better in front of an audience because the increased arousal causes their dominant response (playing the piano well) to occur. On the other hand, a

beginning pianist would likely become more nervous in front of an audience, causing him or her to perform more poorly. Therefore, the positive outcomes of competition (for dominant responses) may really be due to performing in the presence of others, whether one is competing or not. In fact, Triplett (cited by Johnson and Johnson, 1989) hypothesized that the faster times of cyclists who raced against each other were due to the presence of others. He did not mention competition, but only the presence of others. So, cyclists who prefer to train by racing against others may not have faster times because they are trying to beat someone else. They may perform better because they are in the presence of their teammates and are being observed by their coaches. Because they are being observed, they feel pressure to perform better.

Johnson & Johnson's (1989) findings support the idea that competition may not be as productive as it first appears. They state that less than ten percent of the studies they examined demonstrate a significant advantage of competition over cooperation in terms of productivity. In addition, over 50 percent of the findings were statistically significant in favor of cooperation. They also highlight the negative correlation between high achievers and a competitive personality, demonstrating that individuals who perform well do not possess high levels of trait competitiveness. Kohn (1986) supports this argument by citing research done by Robert L. Helmreich, who performed seven different studies on the relationship between achievement/performance and competition. In his first study on the issue of competition and performance, Helmreich found that the Ph.D. scientists who were high on the orientation for work scale, who preferred challenging tasks, and who were low on the competitiveness scale achieved higher achievement levels (measured by the number of times their work was cited by colleagues). Helmreich

performed similar studies with populations consisting of airline pilots, fifth-and sixth-graders, psychologists, and businessmen, all of which showed negative correlations between achievement and competitiveness levels.

Similar results were found in Johnson, Maruyama, Johnson, Nelson, and Skon's (1981) meta-analysis of 122 North American studies between 1924 and 1980. Their findings confirmed the superiority of cooperation over competition and individualism in terms of achievement and performance. The studies included in the meta-analysis examined data on competitive, cooperative, and individualistic structures, and their relationships with achievement and performance. It was found that cooperation promoted higher achievement than did competition by 65 to 8 (with 36 no differences), cooperation promoted higher achievement than individualistic efforts by 108 to 6 (with 42 no differences), and there was no significant difference between competitive and individualistic efforts.

The potential reasons for the failings of competition are described by Kohn (1986). He asserts that competition causes high anxiety, selfishness, self-doubt, poor communication, and aggression. It destroys relationships, lowers productivity, and generally makes life unpleasant. For example, Kohn (1986) cites an experiment conducted by Peter Blau in 1954 which compared two groups of interviewers at an employment agency. One group worked cooperatively to fill openings, while the other group was competitive in filling its openings. Not only did the competitive group fill fewer positions, the workers, "in their eagerness to make many placements . . . often ignored their relationships with others," while members of the cooperative groups

experienced “social cohesion [which] enhanced operating efficiency by facilitating co-operation (quoted by Kohn, 1986).”

In addition to cohesion, cooperation increases self-esteem in individuals, according to Ruth Rubinstein’s work (cited by Kohn, 1986). She measured self-esteem levels of ten to fourteen year old children who attended either a competitive or noncompetitive summer camp. While the competitive summer camp had no effect on the children’s self-esteem, the noncompetitive summer camp raised self-esteem levels. The findings may coincide with the idea that cooperation involves sharing skills that increase success, and interpersonal relationships are formed among the children, promoting more positive feelings.

While competition certainly does not increase self-esteem, it does increase anxiety levels, as noted by several research studies (Kohn, 1986). In one study, students became more anxious when they had to compete in motor-steadiness tasks. In another, students participating in competitive discussion sections felt more anxious than they did in the cooperative sections. Because they are more anxious, individuals may be more concerned about themselves than others in competitive situations. In fact, Mark Barnett (cited by Kohn, 1986) found that students who were rated as more competitive by their teachers were less likely to feel empathy when watching slides of other students expressing feelings such as anger, happiness, sadness, and fear.

In addition to the negative impact of competing against other individuals for scarce rewards, the actual results (experience of losing) of competition may be even more hazardous to individuals. Certain individuals have higher ability levels or thrive on competition, and are therefore more often the winners than others. The rest of the

competitors fail most of the time, leading to low self-esteem, apprehension about losing, and grief from failure. Cooperation, on the other hand, leads to emotional maturity, well-adjusted social relations, strong personal identity, an internal locus of control, and trust and optimism about others (Kohn, 1986). It seems, then, that cooperation would provide for a psychologically healthier environment.

The problem is that many organizations still encourage a competitive atmosphere to drive employees to reach higher levels of production. Salespeople strive to obtain the most sales in order to achieve rewards and coworkers are pressured to outperform each other in order to receive promotions within the organization. As the research by Kohn and Johnson and Johnson indicate, there has been research on the effects of task interdependence (competition, cooperation, and individualistic environments) on performance and productivity, but there has been little research focusing on the effects of task interdependence on job satisfaction. If competition has such negative effects on individuals, job satisfaction may be lowered in competitive work environments. Employees who compete against others in their jobs may have higher levels of stress and anxiety than those who are able to work with others to achieve the best possible outcome for all involved. If employees are anxious at work, they may not enjoy their jobs, and they may transfer their dissatisfaction with the working environment to the job itself. Low levels of job satisfaction may, in fact, be an indication that an employee is not happy working in a competitive situation.

If it is true that job satisfaction and environment are related, it is important to understand how group environment (competitive, cooperative, and individualistic) affects employees so that members of organizations may be more satisfied with their work. If

they are more satisfied with their work they may also perform better. The current study sought to determine how group environment affects job satisfaction and performance.

In the current study, participants worked on a creative thinking task and were assigned to one of four conditions. The participants in the group competition condition worked in groups competing against other groups to achieve the highest score of any group. The participants in the cooperation condition worked together in teams to reach the highest score possible (without competing against others). Participants in the individual condition worked alone to reach the highest score possible (without competing against others). Finally, the participants in the individual competition condition competed against other individuals to achieve the highest score of anyone else in the room they were working in.

After completion of the task, participants answered questions to determine their levels of satisfaction with the task and environment (job satisfaction). While cooperation is thought to be more psychologically healthy, not all individuals prefer working in cooperative rather than competitive environments. Because some individuals may possess higher levels of trait competitiveness, they may have greater job satisfaction and better performance when working in competitive situations. For that reason, participants also completed a trait competitiveness questionnaire measuring their levels of competitiveness. Due to the possibility of participants preferring competition rather than cooperation, the current study sought to measure whether or not trait competitiveness would have a relationship with performance and job satisfaction.

On the basis of Johnson and Johnson's (1989) and Kohn's (1986) findings that cooperation is superior to competition, it was hypothesized that:

- 1) Participants in non-competitive conditions (cooperation and individual) would have greater job satisfaction than participants in competitive conditions (group competition and individual competition).
- 2) Participants in the cooperation condition would have better performance than participants in the group competition condition.
- 3) Participants in the individual condition would have better performance than participants in the individual competition condition.
- 4) Participants in the group conditions (group competition and cooperation) would have better performance than participants in the individual (individual competition and individual) conditions.

Method

Participants

Seventy-three Introduction to Psychology Lab students from two Catholic, liberal arts colleges participated in the study. The majority of participants were female (61.6%), while 28.8% of the participants were male. The majority of participants (83.6%) listed their ethnic identity as Caucasian/white, 2.8% listed Asian/Pacific Islander, and 13.7% did not respond to the question. About half (53.4%) of the participants were 18 years old, 26.0% were 19, 6.8% were 20, and 4.1% were 21. Students were encouraged to participate in the study, and were offered extra credit for their Psychology Laboratory class grades as an incentive. All students willing to participate were selected and randomly assigned to the group competition, cooperation, individual competition, or individual condition.

Materials

The study used a poultry juice baster, pencils, and paper, and took place in the student centers at the two colleges. The task consisted of participants generating as many uses as possible for a poultry juice baster, and was based on the Creativity Test: Intergroup Competition task by Martin H. Crowe in The Encyclopedia of Group Activities (1989).

A five-item measure of job satisfaction, developed by Hackman and Oldham (1975), was also used. The items are listed in Appendix A. The response format was a seven-point Likert scale ranging from “Strongly Agree” to “Strongly Disagree.” An internal consistency reliability (type not specified) of 0.76 in a study of 658 employees in varied jobs in seven organizations was reported.

A four-item measure of trait competitiveness, developed by Helmreich and Spence (1978), was used. The items are listed in Appendix A. The response format was a seven-point Likert scale ranging from “Strongly Agree” to “Strongly Disagree.” Coefficient alpha of 0.84 was reported.

Procedure

Participants were randomly assigned to the group competition, cooperation, individual competition, or individual conditions. Participants met in the student centers of the two colleges to complete the study. They were informed of their right of confidentiality, and signed consent forms indicating they understood that right. Participants were read one of four sets of instructions to complete the task. Participants in all conditions were informed that they would have fifteen to twenty minutes to think of as many uses as possible for the poultry juice baster located in the front of the room. In

addition, the more creative the uses, the better. The uses could include just one part of the baster or both parts, assembled or disassembled.

Participants in the group competition condition were instructed to work in a group of two individuals to compete against the other groups in the room. They were told that their goal was to achieve the highest group score (based on the highest number of uses and the most creative uses). Participants in the group cooperation condition were instructed to work in groups of two individuals to generate as many uses as possible for the baster and the most creative uses as possible. Participants in the individual condition were instructed to work individually on the task to achieve the highest score possible. While participants in the group cooperation and individual conditions were not instructed to compete against others, there may have been implied competition because other individuals were in the room working on the same task. The researcher was not able to measure any implied competition. Participants in the individual competition condition were instructed to work individually in order to achieve the highest score among individuals in the room. In all research sessions, participants were not aware of participants working in different conditions until completion of the task.

When participants were finished the scoring process was explained to them. They were told they would be judged on Numerical Score (one point for each different use listed for the baster), Flexibility Score (one point for each of the different categories covered in the list including game uses, functional uses, writing-drawing uses, decorative uses, and other uses), and Elaboration Score (one point for each idea elaborating beyond a basic idea). The Numerical Score is simply the number of uses participants produced, while the Flexibility and Elaboration Scores are measures of creativity. Participants in all

conditions were told that if they would like to know their scores and their statuses as winners or losers (only group competition and individual competition condition participants were given the choice to know their status as winners or losers), they may write their names on their answer sheets and they would be informed at a later date. However, no participants were actually given performance feedback during the study or anytime after the study (they were made aware that they would not receive feedback during the debriefing). Thus, while the performance criteria were explained to all participants, no performance feedback was given to anyone during the study. However, the researcher was unable to tell if participants were able to compare their performance with other participants, and if this occurred, it may have affected the results.

Next, participants were given the job satisfaction and trait competitiveness scales to complete. After completion of the scales, participants were debriefed. They were told that the types of uses they created would not be used as a measure of creativity, but the number of uses they generated would be measured as an indicator of productivity. Participants were told that the number of uses they generated in no way indicated their actual levels of creativity or intelligence and that this was a simple task used to study the effects of group environment on job satisfaction and performance. While the activity has been used to measure or foster creativity, the participants' creativity levels were not measured in the current study.

Results

Performance

An alpha level of $p < .05$ was adopted for all analyses. An analysis of variance (ANOVA) of the number of uses yielded a significant group environment effect, $F(3,$

69) = 5.753, $p = .001$ }. Means and standard deviations are shown in Table 1. Results of Tukey HSD post hoc test showed that participants in the group competition condition ($M = 33.30$, $SD = 13.58$) completed significantly more uses than participants in the cooperation condition ($M = 23.06$, $SD = 10.97$). Participants in the group competition condition also had a significantly higher number of uses than those in the individual condition ($M = 19.90$, $SD = 8.71$). Participants in the individual competition condition ($M = 30.00$, $SD = 11.73$) scored significantly higher than participants in the individual condition. Thus, contrary to expectations, performance was superior under the competitive conditions.

Satisfaction

In addition to ANOVA, Tukey HSD post hoc test was used. Significant differences between conditions were shown in the responses to “Generally satisfied with my work,” [$F(3,69) = 5.430$, $p < .005$]. Participants in the individual condition ($M = 5.62$, $SD = 1.12$), individual competition condition ($M = 5.50$, $SD = 1.15$), and group competition condition ($M = 5.90$, $SD = .64$) all reported significantly higher satisfaction than individuals in the cooperation condition ($M = 4.31$, $SD = 1.89$) (see Table 2).

Trait Competitiveness

Generally, participants “agreed slightly” with items on the trait competitiveness scale. They rated competitiveness higher in the categories that indicated performance issues (“Enjoy working in competitive situations” and “Try harder when competing”) than those that indicated the importance of competition (“Important to perform better than others” and “Winning is important in work and games”). Means and standard deviations are shown in Table 3.

Each item on the trait competitiveness scale was correlated with each item on the performance and job satisfaction measures, and only two significant correlations (out of 24) were found. The correlation between “Enjoy working in competitive situations” and “Satisfied with this task” was .265 ($p < .05$). The correlation between “Enjoy working in competitive situations” and “Generally satisfied with my work” was .313 ($p < .01$). No significant correlations were found between trait competitiveness and performance.

Discussion

In the present study, the effects of task interdependence on job satisfaction and performance were investigated. Previous research on the effects of task interdependence on performance has shown superior performance as a result of cooperative conditions. The results of this study supported some, but not all of the hypotheses.

First, trait competitiveness did not seem to have a strong relationship with job satisfaction and performance. There were no correlations between items on the trait competitiveness items and performance measures, and there were only two significant correlations between items on the trait competitiveness questionnaire and items on the job satisfaction questionnaire. While the two positive correlations may indicate that participants who had higher levels of trait competitiveness tended to report higher job satisfaction, it is difficult to state a strong relationship. The two positive correlations may indicate a Type I error. It is possible that the significant correlations actually occurred by chance rather than indicating a relationship. With the significance level set at $p < .05$, five percent of the correlations are likely to be significant by chance alone. With 24 correlations, 1.2 (5%) would be significant due to chance.

However, the relationship between “Generally satisfied with my work” and “Enjoy working in competitive situations” was significant at the $p > .01$ level, indicating that it did not occur by chance alone. The correlation indicates that as ratings to “Generally satisfied with my work” rose, so did “Enjoy working in competitive situations.” Either those who enjoy competition were more satisfied, or those who were more satisfied enjoy competition, both indicating that satisfaction is related to trait competitiveness. In addition, the relationship may indicate a third variable to which both satisfaction and trait competitiveness are related. The relationship may indicate that the type of environment (competitive, cooperative, or individualistic) an individual works in should match his or her personality so that higher levels of satisfaction may be attained.

A possible explanation for the lack of a strong relationship among the other items on the trait competitiveness questionnaire and the performance and job satisfaction items may be due to the fact that participants in general indicated agreement with the trait competitiveness items. Restriction of range was indicated as most participants reported “neutral” to “strongly agree” with statements showing trait competitiveness. If there was too much homogeneity in the sample, it would be difficult to find significant correlations, because there would be less sensitivity to the job satisfaction and performance differences found between individuals rating higher or lower on the trait competitiveness scale. In an extreme example, if all participants rated their trait competitiveness as “high,” a correlation with job satisfaction would not be found. In that example, job satisfaction would not be related to competition, because a person who indicated high job satisfaction would have the same trait competitiveness as a person who rated low job satisfaction. Therefore, trait competitiveness would not affect how the individual rates job

satisfaction. In the current study, most of the participants enjoyed competition, so it did not really affect how they performed or how they rated their job satisfaction. For that reason, the results of the current study may have been valid. It is possible that competition was actually superior to cooperation and individualism for the participants in the current study. It is a possibility that those who enjoy competing may actually be more productive in competitive situations and also have higher levels of job satisfaction.

Hypotheses

The first hypothesis was not supported, as participants in the non-competitive conditions did not have greater job satisfaction than individuals in the competitive conditions. The results of most items on the job satisfaction questionnaire showed no significant difference between participants in different conditions. The item that revealed a significant difference, "Generally satisfied with my work," showed that participants in the individual, individual competition, and group competition conditions were more satisfied with their work than participants in the cooperation condition.

There are a couple potential explanations for the findings. First, during the study, there was little feedback provided to participants informing them of their scores or of their status as winners or losers. Participants were shown a rating system for the number and types of uses they generated, but they were then told the rating system did not really measure intelligence or creativity. In addition, participants in the group competition and individual competition conditions did not find out if they had "won" or "lost." They did not know how others had performed and had no way of measuring their own performances. The effects of feedback may be an important factor for the effects of group environment on job satisfaction. According to Vallerand, Gauvin, and Halliwell

(1986), the loser may feel incompetent and the winner may feel competent, which would affect participants' scores on satisfaction surveys. Had participants been told they scored lower than other individuals, they may have been less satisfied with the task and encountered more negative feelings for the task and themselves. If this is true, then losing a competition, rather than competing, is what harms satisfaction and future performances.

In addition, satisfaction may be caused by the amount of production rather than by the environment an individual works in. As Industrial Psychology research has indicated, it is possible that an individual may not care whether he or she works in a competitive, cooperative, or individualistic environment as long as he or she is being productive (Schultz, 1994).

Finally, the General Job Satisfaction Scale (Hackman & Oldham, 1975) may not have translated well for the current study. It was designed as a measure of job satisfaction in the workplace, and the participants may not have been tied to the task and the results of the task as much as they would be to a job or career. For example, Question 2, "I frequently think of quitting this job/task," may not have applied to participants because the task only lasted for about 45 minutes, compared to a job that may last many years. The questionnaire may not have had high validity for the current study, therefore, a different measure may have provided different results.

The second and third hypotheses were not supported by the results; in fact, the results supported hypotheses in the other direction. Participants in the competitive conditions performed better than participants in the non-competitive conditions. There are several potential explanations for these results. One is that the participants may

actually perform better when they are in competitive situations. This may be due to the high levels of trait competitiveness in the participants. It may be that the particular population is more competitive than the average population and thus is more satisfied when competing and performs better when competing. Norms for the scale were not available to determine the levels of trait competitiveness in the general population, so this explanation is speculative. Campion and Medsker (1993) support a similar idea when they argue that “employees who prefer to work in groups may be more satisfied and effective in groups.” In the same light, participants who enjoy competition may be more satisfied and effective in competitive situations.

On the other hand, the results might not have indicated a clear superiority of competition over cooperation. Only the quantity of uses was used as a performance measure, not the quality of uses. Studies show that groups working together without competition have higher quality performance than groups working against others (Kohn, 1986). In competitive situations, the goal is to achieve a reward or a scarce resource, usually by performing more quickly or by producing more quantity. In the absence of competition, groups strive to achieve the highest quality work possible. If the quality of uses had been judged in this study, the hypothesis may have been supported.

Another reason for the lack of support for these two hypotheses may be due to the task itself. There was no disadvantage to losing, so the work environment was not tense or stressful as it would be in a real work situation. An individual vying for a promotion would indicate much different levels of satisfaction than an individual thinking of uses for a poultry juice baster, especially if the individual loses. If there had been consequences to losing, participants who performed more poorly than others may have

rated their job satisfaction lower as well. If there had been more skill involved, as in the workplace, those who won may have reported even higher job satisfaction because they would have taken more pride performing the task well and gaining a higher reward. In the current study, no concrete rewards were given for the high performers.

An additional possible explanation for the apparent superiority of competition in terms of quantity of uses may lie in the cooperative groups themselves. Participants in the study may or may not have known other participants with whom they were working. If a participant felt uncomfortable working with someone he or she did not know, performance may have been impeded. Putting together groups of strangers may not be the best way to assemble cooperative groups. In work situations, individuals know, and often choose, whom they may work with on a project. If friends or acquaintances had worked together on the task in the current study, the results may have been more supportive of the current study's hypotheses.

Finally, the fourth hypothesis was supported in some, but not all cases. Participants in the group competition condition did perform better than those in the individual competition and individual conditions. Additionally, participants in the cooperation condition (using a group task) did perform better than those in the individual condition. Surprisingly, members of the individual competition condition performed better than the groups in the cooperation condition, which means that those performing alone thought of more uses than groups of two people working together. The fact that individuals competing against each other performed better than groups of individuals working together may indicate a motivating factor of competition rather than group size for these participants. In addition, the dynamics of pairs may be different from the

dynamics of a group of three or more people (Forsyth, 1999). If a larger group size had been used for the cooperative condition, results may have been different.

Because of the inconsistency between previous research findings and the results of the current study, there may be a few shortcomings in the current experiment. First, college students comprise the sample, and it may not be generalizable to the workplace or to a different school environment. The average population may have lower levels of trait competitiveness than the population in the study, which could have a great impact on the results. In addition, the students may not be a representative sample of the population due to the homogeneity of the students in the present study in terms of race and age. Most students in the current study were middle class, Caucasian students between the ages of 18 and 22, while the overall population is much more diverse. Different cultures may have different levels of trait competitiveness, and they may react differently to competitive, cooperative, or individualistic group environments. Older or younger individuals, or individuals of a different race or culture may be more satisfied with a job and perform better under different conditions than individuals in the current study.

Second, because the experiment involved a controlled atmosphere under the direction of the researcher, it may not be applicable to a regular work situation. The setting may not have included feedback or rewards that were valuable to the participants, and it may not have included disadvantages that would encourage them to perform better or cause higher levels of anxiety. In a work setting, performance evaluations are given regularly to individuals, and they are generally given daily feedback about their work habits and productivity. When individuals compete against others for a scarce reward, such as a promotion, a raise, or a project, they are told their status as “winners” and

“losers,” and they are able to compare their work with others. They are given rewards for a job well done, and they are punished for producing less desirable work. In this study, participants were given little feedback, no rewards, and very few disadvantages as a result of their work on the task. It seems the differences between a real work situation and an experimental study were too great to achieve results that would support the hypotheses.

Finally, the study did not assess the participants’ quality of performance. Quality may be an important aspect of a study on competition, cooperation, and individualism. Participants’ work was only measured by the number of uses they created for the turkey baster. If a valid and reliable scale was available to measure the creativity of the uses, the results may have been much different. Cooperation may be most important for the quality of work results rather than the quantity of work results. Future studies should take into account the previously mentioned flaws and focus on studying the effects of task interdependence on job satisfaction and performance in a work environment with a more representative population.

Appendix A

General Job Satisfaction Scale (Hackman & Oldham, 1975) (Internal reliability = 0.76)

1. Generally speaking, I am very satisfied with this job.*
2. I frequently think of quitting this job.*
3. I am generally satisfied with the kind of work I do in this job.*
4. Most people on this job are very satisfied with the job.*
5. People on this job often think of quitting.*

* The word “job” was replaced with the word “task” in this study.

Trait Competitiveness Scale (Helmreich & Spence, 1978) (Alpha = 0.84)

1. I enjoy working in situations involving competition with others.
2. It is important to me to perform better than others on a task.
3. I feel that winning is important in both work and games.
4. I try harder when I am in competition with other people.

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Table 1.
Number of Uses Generated by Participants

<u>Task Interdependence</u>	<u>N</u>	<u>Mean</u>	<u>Std. Deviation</u>
Individual	21	19.90	8.71
Ind. Competition	16	30.00	11.73
Cooperation	16	23.06	10.97
Group Competition	20	33.30	13.58
Total	73	26.48	12.42

Table 2.
Ratings on the "Generally satisfied with my work" Scale

<u>Task Interdependence</u>	<u>N</u>	<u>Mean</u>	<u>Std. Deviation</u>
Individual	21	5.62	1.12
Ind. Competition	16	5.50	1.15
Cooperation	16	4.31	1.89
Group Competition	20	5.90	.64
Total	73	5.38	1.35

Table 3.
Trait Competitiveness Data

<u>Item</u>	<u>N</u>	<u>Mean</u>	<u>Std. Deviation</u>
Enjoy working in competitive situations	73	5.47	1.44
Important to perform better than others	73	4.95	1.40
Winning is important in work and games	73	4.29	1.54
Try harder when competing	73	5.59	1.23